

CLAIMS

1. Device for converting an AC voltage from the mains electricity supply into a DC voltage of predetermined level
5 (and waveform), comprising:
 - a rectifier circuit for connecting to the mains electricity supply;
 - a switching circuit connected to the rectifier circuit;
 - 10 - a main transformer connected to the switching circuit; and
 - an auxiliary transformer which is connected to the switching circuit and the secondary winding of which is coupled to the secondary winding of the main transformer such
 - 15 that the current through the switching circuit and the main transformer is limited to a predetermined value.
2. Device as claimed in claim 1, wherein a filter circuit is connected between the rectifier circuit and the switching circuit.
- 20 3. Device as claimed in claim 2, wherein the filter circuit comprises a number of diodes.
4. Device as claimed in claim 2 or 3, wherein the filter circuit comprises at least one capacitor and one self-induction.
- 25 5. Device as claimed in any of the foregoing claims, wherein the switching circuit comprises a power transistor in common-base configuration.
6. Device as claimed in any of the foregoing claims, wherein the switching circuit comprises a DIAC.
- 30 7. Device as claimed in either of the claims 5 or 6, wherein the auxiliary transformer is connected to the collector or emitter of the power transistor.

8. Device as claimed in any of the foregoing claims, wherein a diode is connected between the connecting terminals of the secondary windings of the auxiliary transistor.

9. Device as claimed in any of the foregoing claims, 5 wherein a resistor is connected between the base and the collector or emitter of the power transistor.

10. Device as claimed in any of the claims 5-9, wherein a resistor with temperature-dependent value is connected between the base of the power transistor on the one 10 hand and the collector or emitter on the other.

11. Method for operating a device as claimed in one or more of the foregoing claims.

12. Device as claimed in any of the claims 5-10, wherein the power transistor is a bipolar transistor.